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**APPARATUS AND METHOD FOR PROVIDING COLLABORATIVE VOTING
WHILE MAINTAINING ANONYMITY OF INDIVIDUAL VOTERS**

5 **BACKGROUND OF THE INVENTION**

1. Technical Field:

The present invention is directed to an apparatus
and method for providing collaborative voting while
10 maintaining anonymity of individual voters.

2. Description of Related Art:

The Internet is becoming a principle fixture in
modern culture for interacting with people in remote
15 locations, conducting business, and obtaining
information. With the increased importance of the
Internet in today's society, Internet based voting has
become more popular.

For example, some jurisdictions and corporations
20 already have systems in place that allow voting on-line
via the Internet. These systems, however, are very
limited to providing users with the ability to cast their
own vote without any ability to consult others before
voting or obtaining information about persons or issues
25 being voted on.

Often people like to consult other persons before
voting. This is often true in the case of city-council,
school board, etc., elections because candidates are not
known very well to the people who must vote. Often
30 family members, union members, or a group of friends
geographically dispersed wish to decide, as a group,
their voting choices and perform block voting such that

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all members of the group vote for the same candidate or the same way on an issue. However, in some instances, it may be desirable for the voter to maintain anonymity while determining how others have or are going to vote.

- 5 The known systems do not provides such an ability.

SUMMARY OF THE INVENTION

The present invention provides an apparatus and a method for collaborative voting that maintains anonymity of the voters. With the apparatus and method of the present invention, information regarding voters is compiled into a database and used to generate one or more interfaces through which another voter or potential voter may be informed of the voting patterns of other voters.

Through the present invention, the voter or potential voter may select a subject, an individual voter, one or more groups of voters, a geographical voter area, voting information for various times, and the like. In response to such a selection, voting information for the corresponding selection is provided to the voter.

In addition, the present invention may provide an interface through which a voter may enter a comment or the like. The entered comments may then be viewed by other voters or potential voters when the submitter of the comment is selected or is part of a group of voters falling within a category selected by a voter or potential voter.

As a further feature of the present invention, the voter's vote may be held in a non-final state during a predetermined period. During this predetermined period, the voter may view the voting information described above and either decide to change his/her vote or leave his/her vote as it was entered. The predetermined period may be a predetermined time interval, such as from 9 a.m. To 7 p.m. On November 11, 2001, a predetermined time interval from the time when the voter's vote was originally submitted, such as 3 hours from the time the vote was

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submitted, and the like. Other features and advantages of the present invention will be described in, or will become apparent to those of ordinary skill in the art in view of, the following detailed description of the

5 preferred embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

The novel features believed characteristic of the invention are set forth in the appended claims. The invention itself, however, as well as a preferred mode of use, further objectives and advantages thereof, will best be understood by reference to the following detailed description of an illustrative embodiment when read in conjunction with the accompanying drawings, wherein:

Figure 1 is an exemplary block diagram of a distributed data processing system in accordance with the present invention;

Figure 2 is an exemplary block diagram of a server apparatus according to the present invention;

Figure 3 is an exemplary block diagram of a client apparatus according to the present invention;

Figure 4 is an exemplary block diagram of a voting coordination device according to the present invention;

Figure 5 is an exemplary block diagram of a voter database entry according to the present invention;

Figure 6A is an exemplary diagram of a voter interface for casting a vote according to the present invention;

Figure 6B is an exemplary diagram of a voter interface for obtaining voter information based on one or more selected voter categories;

Figure 6C is an exemplary diagram of a voter interface for displaying voter information according to the selected one or more voter categories;

Figure 7 is a flowchart outlining an exemplary operation of the present invention when obtaining a vote from a voter; and

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Figure 8 is a flowchart outlining an exemplary operation of the present invention when providing voter information to another voter or potential voter.

Figure 8 is a flowchart outlining an exemplary operation of the present invention when providing voter information to another voter or potential voter.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention is directed to an apparatus and method for providing collaborative voting while
5 maintaining anonymity of individual voting preferences. The present invention may be implemented as a service that is provided either completely or partially using a distributed computing system. As such, a brief
10 explanation of a distributed data processing system in which the present invention may be implemented will be provided.

With reference now to the figures, **Figure 1** depicts a pictorial representation of a network of data processing systems in which the present invention may be implemented.
15 Network data processing system **100** is a network of computers in which the present invention may be implemented. Network data processing system **100** contains a network **102**, which is the medium used to provide communications links between various devices and computers
20 connected together within network data processing system **100**. Network **102** may include connections, such as wire, wireless communication links, or fiber optic cables.

In the depicted example, server **104** is connected to network **102** along with storage unit **106**. In addition,
25 clients **108**, **110**, and **112** are connected to network **102**. These clients **108**, **110**, and **112** may be, for example, personal computers or network computers. In the depicted example, server **104** provides data, such as boot files, operating system images, and applications to clients
30 **108-112**. Clients **108**, **110**, and **112** are clients to server **104**. Network data processing system **100** may include

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additional servers, clients, and other devices not shown. In the depicted example, network data processing system **100** is the Internet with network **102** representing a worldwide collection of networks and gateways that use the TCP/IP suite of protocols to communicate with one another. At the heart of the Internet is a backbone of high-speed data communication lines between major nodes or host computers, consisting of thousands of commercial, government, educational and other computer systems that route data and messages. Of course, network data processing system **100** also may be implemented as a number of different types of networks, such as for example, an intranet, a local area network (LAN), or a wide area network (WAN). **Figure 1** is intended as an example, and not as an architectural limitation for the present invention.

Referring to **Figure 2**, a block diagram of a data processing system that may be implemented as a server, such as server **104** in **Figure 1**, is depicted in accordance with a preferred embodiment of the present invention. Data processing system **200** may be a symmetric multiprocessor (SMP) system including a plurality of processors **202** and **204** connected to system bus **206**. Alternatively, a single processor system may be employed. Also connected to system bus **206** is memory controller/cache **208**, which provides an interface to local memory **209**. I/O bus bridge **210** is connected to system bus **206** and provides an interface to I/O bus **212**. Memory controller/cache **208** and I/O bus bridge **210** may be integrated as depicted.

Peripheral component interconnect (PCI) bus bridge **214** connected to I/O bus **212** provides an interface to PCI

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local bus **216**. A number of modems may be connected to PCI local bus **216**. Typical PCI bus implementations will support four PCI expansion slots or add-in connectors. Communications links to network computers **108-112** in

5 **Figure 1** may be provided through modem **218** and network adapter **220** connected to PCI local bus **216** through add-in boards.

Additional PCI bus bridges **222** and **224** provide interfaces for additional PCI local buses **226** and **228**,
10 from which additional modems or network adapters may be supported. In this manner, data processing system **200** allows connections to multiple network computers. A memory-mapped graphics adapter **230** and hard disk **232** may also be connected to I/O bus **212** as depicted, either
15 directly or indirectly.

Those of ordinary skill in the art will appreciate that the hardware depicted in **Figure 2** may vary. For example, other peripheral devices, such as optical disk drives and the like, also may be used in addition to or in
20 place of the hardware depicted. The depicted example is not meant to imply architectural limitations with respect to the present invention.

The data processing system depicted in **Figure 2** may be, for example, an IBM e-Server pSeries system, a
25 product of International Business Machines Corporation in Armonk, New York, running the Advanced Interactive Executive (AIX) operating system or LINUX operating system.

With reference now to **Figure 3**, a block diagram
30 illustrating a data processing system is depicted in which the present invention may be implemented. Data processing

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system **300** is an example of a client computer. Data processing system **300** employs a peripheral component interconnect (PCI) local bus architecture. Although the depicted example employs a PCI bus, other bus architectures such as Accelerated Graphics Port (AGP) and Industry Standard Architecture (ISA) may be used. Processor **302** and main memory **304** are connected to PCI local bus **306** through PCI bridge **308**. PCI bridge **308** also may include an integrated memory controller and cache memory for processor **302**. Additional connections to PCI local bus **306** may be made through direct component interconnection or through add-in boards. In the depicted example, local area network (LAN) adapter **310**, SCSI host bus adapter **312**, and expansion bus interface **314** are connected to PCI local bus **306** by direct component connection. In contrast, audio adapter **316**, graphics adapter **318**, and audio/video adapter **319** are connected to PCI local bus **306** by add-in boards inserted into expansion slots. Expansion bus interface **314** provides a connection for a keyboard and mouse adapter **320**, modem **322**, and additional memory **324**. Small computer system interface (SCSI) host bus adapter **312** provides a connection for hard disk drive **326**, tape drive **328**, and CD-ROM drive **330**. Typical PCI local bus implementations will support three or four PCI expansion slots or add-in connectors.

An operating system runs on processor **302** and is used to coordinate and provide control of various components within data processing system **300** in **Figure 3**. The operating system may be a commercially available operating system, such as Windows 2000, which is available from Microsoft Corporation. An object oriented programming

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system such as Java may run in conjunction with the operating system and provide calls to the operating system from Java programs or applications executing on data processing system **300**. "Java" is a trademark of Sun

5 Microsystems, Inc. Instructions for the operating system, the object-oriented operating system, and applications or programs are located on storage devices, such as hard disk drive **326**, and may be loaded into main memory **304** for execution by processor **302**.

10 Those of ordinary skill in the art will appreciate that the hardware in **Figure 3** may vary depending on the implementation. Other internal hardware or peripheral devices, such as flash ROM (or equivalent nonvolatile memory) or optical disk drives and the like, may be used
15 in addition to or in place of the hardware depicted in **Figure 3**. Also, the processes of the present invention may be applied to a multiprocessor data processing system.

As another example, data processing system **300** may
20 be a stand-alone system configured to be bootable without relying on some type of network communication interface, whether or not data processing system **300** comprises some type of network communication interface. As a further example, data processing system **300** may be a Personal
25 Digital Assistant (PDA) device, which is configured with ROM and/or flash ROM in order to provide non-volatile memory for storing operating system files and/or user-generated data.

The depicted example in **Figure 3** and above-described
30 examples are not meant to imply architectural limitations. For example, data processing system **300** also may be a notebook computer or hand held computer in

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addition to taking the form of a PDA. Data processing system **300** also may be a kiosk or a Web appliance.

Returning to **Figure 1**, the present invention provides an apparatus and method for providing
5 collaborative voting. With the present invention, a voting coordinator device is provided for coordinating the identification of voters, the control of voting, and the collection of votes and of voter data, and the providing of voter information to users in response to a
10 user selection of a voter category. The voting coordinator device may be provided as a stand-alone dedicated machine or as part of a distributed data processing system.

In a preferred embodiment, the voting coordinator
15 device is provided in a server apparatus, such as server **104** in **Figure 1**. In such a distributed data processing system as that shown in **Figure 1**, the server **104** may provide the voting coordinator device of the present invention, and clients **108-112** may be either personal
20 computing devices, such as a users home personal computers, or dedicated voting machines, such as that described in U.S. Patent No. 5,878,399, entitled "Computerized Voting System," which is hereby incorporated by reference.

25 With the present invention, a user of a client device, such as client device **108**, accesses the voting coordinator device resident on the server **104**. The voting coordinator device stores information regarding votes and voters in a database, such as storage unit **106**
30 a plurality of remotely located storage devices, or one or more local storage devices. The database preferably includes a listing of registered voters and their

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personal information, such as their address, telephone number, age, race, gender, and other demographic or voter information. In addition, the database may, after the voter has voted, maintain a record of the vote cast by the voter, whether the vote has been made permanent, and any comments that the voter may have made regarding the vote. This database information is used by the voting coordinator device to provide interfaces to other voters or potential voters when a voter category is selected.

The database information is preferably obtained at a time that the user registers as a voter. This information may also be gathered from company records, district records, and the like. At registration time, the user may be presented with a plurality of questions that the user may answer. Each question may be used to identify the user as part of a group of voters having a same characteristic, such as age range, race, gender, income level, job type, political party, and other demographic information. This information is then retained as an entry in the database along with an assigned voter identification.

In addition to storing information for individual voters, the database may maintain records of votes and comments by voters for various groups of voters. For example, separate tallies of votes for voters that are aged 25-30, 31-40, and the like. Similarly, separate tallies may be maintained for voters that live in particular geographical locations, such as voting districts, voters of particular races or gender, voters of particular income levels, and other demographic categories.

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In addition, certain registered voters may be grouped together based on affiliations of the voters with one another. For example, if a voter indicates that he/she is a member of the National Rifle Association
5 (NRA), this designation may be used to group the voter with other voters that are members of the NRA.

Similarly, a user may enter a particular group identifier and be grouped with other voters having the same group identifier. In this way, for example, even members of
10 families may be identified and grouped with one another. Thus, for example, if a voter enters a group identifier of "smithfamily" and another voter, such as a brother or sister, enters the same group identifier, these siblings will be grouped with one another.

15 The present invention provides a mechanism through which these various demographic categories and groupings may be selected by a user to thereby obtain information about the voting patterns of members of the category or grouping. This information may then be used by the user
20 to help in determining how to vote or whether to change the user's vote in order to provide collaborative voting to remotely located voters.

When a user first accesses the voting coordinator device via the user's client device, the user may be
25 presented with an interface through which the user may select a particular election, shareholders meeting, or initiative in which to vote. The user may select a particular election, shareholders meeting, or the like, at which time the voting coordinator device may request
30 that the user enter a voter identification, such as a voter identification number, name, password, and the like.

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The voting coordinator device verifies that the user is an eligible voter for the selected election, shareholder meeting, or the like, and then presents a voter interface through which the user may cast votes and/or obtain information regarding the voting patterns of other voters.

For example, the user may choose to view the number of votes cast for various candidates in an election from voters who are of African decent. Alternatively, the user may choose to have an aggregate number of votes cast by voters that are male and are between the ages of 20 and 25 be displayed. Any combination of voter categories may be combined to generate a display of the voting patterns of voters that fall into these categories.

The voting coordination device of the present invention retrieves information from the database based on the particular voter category or categories selected by the user and uses this information to generate a display of voting patterns for the selected categories. Such a display may include a display for each category chosen by the user as well as a display for a combination of the categories. That is, if a user selects to view votes cast by voters that are male and in the age range of 20-25, a window displaying the votes cast by voters that are male may be displayed, a window displaying the votes cast by voters that are 20-25 may be displayed, and a window displaying the votes cast by voters that are both male and 20-25 may alternatively, or in addition, be displayed.

The display of the voter patterns may be statically displayed or may be dynamically displayed. That is, the display may be updated as changes to the database

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information is made. Thus, for example, if a user chooses to view the votes cast by African American voters, the display may be provided to the user's client device in response to the request from the user. This
5 display may be updated periodically such that changes to the database information are reflected in the display on the user's client device. In this way, the user is kept apprised of the current voter pattern for the selected voter category or categories.

10 While displaying the aggregate numbers of votes of the voters in the selected voter category or categories, an interface through which a user may view comments entered by the voters in the selected category or categories may be provided. In this way, the user may
15 obtain information as to why the voter voted in the manner that they did. Such information may be helpful to the user when deciding how to cast his/her vote.

Sometimes voters wish to know how other voters having similar backgrounds as themselves vote on
20 particular candidates or particular issues. The present invention provides a mechanism by which a voter may obtain information regarding the voting patterns of voters having similar backgrounds as themselves.

In a further embodiment of the present invention,
25 the voter interface may further include an option to obtain voter pattern information for voters having similar voter profiles as the user. With such an option, a user's profile from the database is retrieved and other voter profiles in the database having voter
30 characteristics similar to those set forth in the user's profile are obtained. The voter's votes may then be compiled into a display for the user. Such a display may

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include a ranking of the amount of similarity of the other voter to the current user, the voter's vote, and any comments entered by the voter. As with the aggregate displays above, the display according to this embodiment
5 maintains the anonymity of the actual voters.

Once the user decides to cast a vote, the user may make use of the interface to enter the user's vote. The user's vote may be held in a non-final state until the expiration of a predetermined time period or until the
10 user actively indicates that the vote is final and should be made permanent. The predetermined time period may be a time interval, a designated elapsed time from when the vote is initially cast, or the like. During this period, the vote may be changed by the user. However, after the
15 elapse of the predetermined time period, or when the user indicates his/her vote to be final, the vote is made permanent and cannot be changed.

Since votes may be changeable during the predetermined time period, the displays of voter patterns
20 may further include an indicator of how many votes are permanent and how many are non-final. Such an indicator may be an indication to a user as to the possible margin of error of the current state in relation to the possible final outcome of the voting as well as an indication of
25 the conviction of the voters to a particular candidate or stance on an issue.

Figure 4 is an exemplary block diagram illustrating a voting coordinator device according to the present invention. The elements shown in **Figure 4** may be
30 implemented in hardware, software, or a combination of hardware and software. In a preferred embodiment, the

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elements in **Figure 4** are implemented as computer instructions executed by one or more processors.

As shown in **Figure 4**, the voting coordinator device includes a controller **410**, a network interface **420**, a database interface **430**, a voter interface generation system **440**, a search engine **450**, and a vote processing system **460**. The elements **410-460** are coupled to one another via the control/data signal bus **470**. Although a bus architecture is shown in **Figure 4**, the present invention is not limited to such and any architecture facilitating the communication of control/data signals between the elements **410-460** may be used without departing from the spirit and scope of the present invention.

The controller **410** controls the overall operation of the voting coordinator device and orchestrates the operation of the other devices **420-460**. In operation, the controller **410** receives a logon request from a client device via the network interface **420**. In response, the controller **410** instructs the voter interface generation system **440** to provide a voter interface, i.e. a user interface, to the client device. The voter interface provides the user of the client device with a means by which the user may select an election, shareholder meeting, or the like, to participate in and also provide voter identification information.

The controller **410** then receives a selection of an election, shareholder meeting, or the like, from the user of the client device along with a voter identification of the user. The controller **410** instructs the search engine **450** to retrieve the voter profile for the entered voter

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identification from a voter database via the database interface **430**. As previously mentioned, the voter database may be local or remote with respect to the voting coordinator device.

5 The controller **410** then validates the voter identification information provided by the user of the client device based on the voter profile retrieved, if any. Upon validation of the voter identification, the voter interface generation system **440** sends a voter
10 interface to the client device through which the user may select to obtain voter information for various categories and/or groupings of voters. In addition, the voter may select to cast a vote.

 If the user enters a selection to retrieve voter
15 voting pattern information based on one or more voter categories or groupings, the selection is sent to the controller **410** which then instructs the search engine to retrieve voter voting pattern information from the voter database based on the selected voter categories or
20 groupings. The results are returned to the controller **410** which then instructs the voter interface generation system **440** to generate one or more interfaces through which the results may be displayed.

 If the user chooses to cast his/her vote, the choice
25 to do so is provided to the controller **410** which then instructs the voter interface generation system **440** to provide an interface through which the user may enter his/her vote and any comments the user may have. Such an interface will be different depending on the particular
30 election, shareholders meeting, or the like, in which the user is voting. The entries by the user into this interface may then be transmitted back to the controller

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410 which instructs the vote processing system **460** to store the vote and any comments accordingly in the voter database.

The vote processing system **460** may further manage
5 whether or not votes that have been cast are non-final or permanent. The vote processing system **460** may periodically or at the elapsing of a predetermined time period, check each entry in the voter database and update the status of the votes as to whether they are non-final
10 or permanent. In addition, the vote processing system **460** may change the status of a vote from non-final to permanent at the explicit instruction to do so by the user via a voting interface.

Figure 5 is an exemplary diagram of a voter database
15 entry according to the present invention. As shown in **Figure 5**, the voter database entry includes a field **510** for a voter identification and fields **520-540** for personal voter information such as name, address, telephone number, and the like. The voter database entry
20 further includes fields **550-590** for entry of voter category information, such as a group identifier (field **550**), a gender (field **560**), a race (field **570**), an age range (field **580**), and the like.

Searches on the fields may be performed by the
25 voting coordinator device of the present invention for voter validation and voter voting pattern information retrieval. With voter validation, the information in fields **510-540** may be used to perform the validation. With voter voting pattern information retrieval, the
30 information in fields **550-590** may be used to generate a display of voter voting patterns for use by another voter or potential voter.

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With the present invention, the when a user requests voter voting pattern information, only the information in the voter category fields **550-590** may be displayed to the user. Thus, the voter's voter identification and
5 personal information in fields **510-540**, is never provided to other users. In this way, the anonymity of the voter is maintained while still providing the user with valuable information in aiding the user in casting his/her vote.

10 **Figure 6A** is an exemplary diagram of a voter interface for casting a vote according to the present invention. As shown in **Figure 6A**, the interface includes a listing of candidates or issues **610** and corresponding possible votes **620**. The user may select one of the
15 possible votes **620** for each issue and/or candidate. Of course there are limitations on the voting allowed by the voting coordinator device. For example, if there a number of candidates for a single position, only one of the candidates may be chosen. Similarly, a voter may not
20 select both yes and no for an issue.

In addition, to the listings above, the interface provides a comment section **630** in which a user may enter a limited length comment for inclusion when the user's voting information is retrieved by a subsequent user.
25 The comment may be a text comment of a predetermined length and is stored in association with the user's vote and other voter information in a voter profile entry in the voter database.

Also provided on the interface is an option to make
30 the vote permanent or non-final **640**. Based on the selection of either permanent or non-final, the vote processing system **560** flags the vote as either changeable

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or not changeable in the voter database. If the vote is changeable, within the predetermined time period the user may log onto the voting coordinator device again and change his/her vote using the voting interface of **Figure**

5 **6A.**

Figure 6B is an exemplary diagram of a voting interface for obtaining voter information based on one or more selected voter categories. As shown in **Figure 6B**, the voting interface includes a listing **650** of possible
10 voter categories that may be selected. The listing **650** of voter categories includes the option **655** to select a particular group identifier.

In addition, the listing includes operand selections **660** for selecting whether to perform an AND, OR, or NOT
15 operation on the combination of voter categories. For example, a user may select to retrieve voter voting pattern information for voters that are age 20-25 AND African American. Alternatively, the user may select to retrieve voter voting pattern information for voters that
20 are age 20-25 and NOT African American.

Moreover, the voting interface of **Figure 6B** may include an option **665** to search for voter profiles that are similar to the present user's voter profile. By selecting this option **665**, the voter database is searched
25 for voters meeting a minimum requirement of similarity with the present user's voter profile and the results accumulated for display to the user.

The selection of voter categories and/or groups is used to create a search query that is used by the search
30 engine **450** to search the voter database for corresponding entries. The results of the search are then provided in

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another voting interface used to display the results of the retrieval of voter voting patterns.

Figure 6C is an exemplary diagram of a voting interface for displaying the results of a voter voting pattern search. As shown in **Figure 6C**, the voting interface includes one or more windows in which results of the search are displayed. For example, as described above, there may be one or more windows **670-690** illustrating the voting patterns of voters meeting each of the voter categories selected by the user as well as a combination of the voter categories.

In addition, a window or field **695** may be provide in which a listing of voter database entry category information for each voter falling into the grouping of voters identified by the combination of voter categories in the search query. If the user selected the option **665** for identifying voter voting pattern information for voters having a similar voter profile, the window or field **695** may further include an indicator of the similarity of the voter profile with the user's voter profile.

From the list of voter database entry category information, a particular voter database entry may be selected from the listing and thereby, a corresponding comment entered by the voter may be displayed to the user via the comment window or field **697**. At no time is the voter identifier or voter personal information for the voter provided to the user via the voting interface of **Figure 6C**.

Figure 7 is a high level flowchart outlining an exemplary operation of the present invention when obtaining a vote from a voter. As shown in **Figure 7**, the

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operation starts with receiving a selection of a voting event, such as a particular election, shareholder meeting, and the like, from a user (step **710**). The user is then validated as a registered voter for the selected
5 voting event (step **720**). This may also include verifying that the user has not previously submitted a permanent vote through a voter database lookup.

Once the user is validated, the user is provided with a voting interface (step **730**). The user's input to
10 the voting interface is received (step **740**). This input may include the user's votes as well as any comments the user may have entered. The user's input is then stored as part of a voter database entry for later use in providing voter voting pattern information to subsequent
15 voters (step **750**).

Figure 8 is a high level flowchart outlining an exemplary operation of the present invention when providing voter information to another voter or potential voter. As shown in **Figure 8**, the operation starts with
20 receiving a request for voter voting pattern information (step **810**). A voter voting pattern interface is then provided (step **820**) and a user's input into the interface is received (step **830**). This input may include selections of voter categories and operands to thereby
25 generate a search query. Alternatively, the input may be a selection of an option to search for voters similar to the user.

In either case, the voter database is searched for voters matching the designated voter categories according
30 to the grouping defined by the operands, or alternatively for voters matching a voter profile of the user (step **840**). The results of the search are compiled (step **850**)

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and a results interface is generated (step **860**). The results interface may include several windows for displaying different portions of the search results. The results interface is then provided to the user (step
5 **870**).

Thus, the present invention provides an apparatus and method for providing collaborative voting while maintaining the anonymity of voters. The present invention allows a voter to obtain current information
10 about the voting patterns of other voters so that this information may aid the voter in casting his/her vote. In this way, voters may collaborate in their voting by viewing the voting patterns of others. However, the individual identities of the voters are never revealed.

15 It is important to note that while the present invention has been described in the context of a fully functioning data processing system, those of ordinary skill in the art will appreciate that the processes of the present invention are capable of being distributed in
20 the form of a computer readable medium of instructions and a variety of forms and that the present invention applies equally regardless of the particular type of signal bearing media actually used to carry out the distribution. Examples of computer readable media
25 include recordable-type media, such as a floppy disk, a hard disk drive, a RAM, CD-ROMs, DVD-ROMs, and transmission-type media, such as digital and analog communications links, wired or wireless communications links using transmission forms, such as, for example,
30 radio frequency and light wave transmissions. The computer readable media may take the form of coded

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formats that are decoded for actual use in a particular data processing system.

The description of the present invention has been presented for purposes of illustration and description,
5 and is not intended to be exhaustive or limited to the invention in the form disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art. The embodiment was chosen and described in order to best explain the principles of the invention,
10 the practical application, and to enable others of ordinary skill in the art to understand the invention for various embodiments with various modifications as are suited to the particular use contemplated.